REMARKS

I. INTRODUCTION

Claims 1, 3 to 6, 10 and 11 are pending in the present application. Claims 1, 6 and 10 have been amended. In view of the following, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

II. REJECTION OF CLAIMS 1, 3 to 5, 10 and 11 UNDER 35 U.S.C. § 102(b)

Claims 1, 3 to 5, 10 and 11 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,299,051 ("Tsujino"). It is respectfully submitted that Tsujino does not anticipate the present claims for at least the following reasons.

In order to expedite prosecution of the present application, claim 1 has been amended to recite that a tool head for attaching an electrical conductor on a contact surface of a substrate includes, inter alia, "*a converter situated between a vibration conductor and a bonding tool to convert linear vibrations into torsional vibrations such that the bonding tool is able to be incited to rotary vibrations about a tool axis of rotation, the tool axis of rotation being approximately coincident with a torsional axis of rotation of the converter and oriented approximately perpendicular to the contact surface of the substrate*." Support for these amendments may be found, for example, on page 3, lines 28 to 30 and page 7, lines 2 to 3 of the Specification, as well as in Figures 1, 3, 4a and 4b. Tsujino does not disclose, or even suggest, the above-mentioned features, as explained in detail below.

In Fig. 5, Tsujino shows a device for bonding semiconductor chips (11) to substrates (12). The device includes a welding chip (14), to which piezoelectric transducers (17, 18) and respective oscillation transmitting hones (15, 16) are attached. The transducers (17, 18) are oriented perpendicular to one another and cause the welding chip (14) to vibrate in a plane parallel to the substrates (12), which are mounted on a base (19). In addition, as indicated in column 4, lines 28 to 39, the frequency and phase difference of the hones and transducers may be adjusted to form various oscillation loci, such as circles and ellipses. However, the oscillation locus traced by the welding chip (14) is not formed by a *rotary vibration* of a bonding tool about a tool axis, but by the *linear vibrations* of two orthogonally oriented transducers (17, 18) and their respective hones (15, 16) in a plane. In addition, hone (16) and transducer (18), which the Office Action appears to equate with a vibration conductor, do not convert linear vibrations of hone (15) into torsional vibrations, but simply add a perpendicular linear component to the linear vibration of hone (15). Furthermore, welding chip (14), which the Office Action considers to constitute a bonding tool, does not rotate about an axis approximately perpendicular to a contact surface of substrates (12), but undergoes translational movement in a plane parallel to the substrates (12). Moreover, although it should be pointed out that the position of hone (16) and transducer (18) in the embodiments shown in Figures 3 and 6 of Tsujino may allow hone (15) to torsionally vibrate, the ultrasonic welding chip (41) in each of these embodiments is fixed to the hone (15) and can only rotate about an axis parallel to, and not perpendicular to, a contact surface of substrate (12). Accordingly, it is respectfully submitted that Tsujino does not anticipate claim 1 for at least these reasons.

Claim 10 contains features analogous to claim 1 and has been amended in a manner analogous to claim 1. In addition, claim 10 has been amended to correct a typographical error. Accordingly, it is respectfully submitted that Tsujino does not anticipate claim 10 for at least the reasons set forth above.

As for claims 3 to 5 and 11, which respectively depend from claims 1 and 10 and therefore include all of the features of claims 1 and 10, it is respectfully submitted that Tsujino does not anticipate these dependent claims for at least the reasons set forth above.

Regarding claim 4, it is respectfully submitted that Tsujino does not anticipate this claim for the following additional reasons. Tsujino does not disclose, or even suggest, that a converter is held without play in a tool support in a region of at least one node of vibration. As can be discerned from Figure 5, neither the welding chip (14), nor the piezoelectric transducer (18) or the oscillation transmitting hone (16) are shown to be held without play in a region of at least one node of vibration. Welding chip (14) is attached to oscillation transmitting hone (15), but since the hone (15) vibrates during operation, the point of attachment cannot be a node of vibration. Accordingly, it is respectfully submitted that Tsujino does not anticipate claim 4 for these additional reasons.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

III. REJECTION OF CLAIM 6 UNDER 35 U.S.C. § 103(a)

Claim 6 was rejected under 35 U.S.C. § 103(a) as unpatentable over Tsujino in view of U.S. Patent No. 5,201,453 ("Amador") It is respectfully submitted that the combination of Tsujino and Amador does not render claim 6 unpatentable for at least the following reasons.

Claim 6 contains features analogous to claim 1 and has been amended in a manner analogous to claim 1. As set forth in detail in Section II of this response, Tsujino does not disclose or suggest all of the features of claim 1. In addition, Amador et al. is not relied upon for disclosing or suggesting, and Amador clearly does not disclose or suggest all of the features of claim 1 not disclosed or suggested by Tsujino. Accordingly, it is respectfully submitted that the combination of Tsujino and Amador et al. does not render claim 6 unpatentable for at least these reasons. In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

IV. CONCLUSION

In view of the foregoing, it is respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is respectfully requested.

Respectfully submitted,

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